

CLAIMS

What is claimed is:

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1. A method for managing a mutex in a data processing system, the method comprising:

maintaining a spinning thread count value for a number of threads that are spinning on a mutex;

10 attempting to acquire the mutex by a first thread; and

in response to a determination that the mutex has already been acquired by a second thread, determining to enter a spin state or a sleep state on the first thread
15 based on the spinning thread count value.

2. The method of claim 1 further comprising:

entering a spin state if the spinning thread count value satisfies a first condition; and

20 entering a sleep state if the spinning thread count value satisfies a second condition.

3. The method of claim 2 wherein the first condition is that the spinning thread count value is less than a
25 spinning thread count threshold value.

4. The method of claim 2 wherein the second condition is that the spinning thread count value is greater than or equal to a spinning thread count threshold value.

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5. The method of claim 2 further comprising:

comparing the spinning thread count value with a spinning thread count threshold value to select a spin state or a sleep state.

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6. The method of claim 5 further comprising:

adjusting the spinning thread count threshold value based on an amount of time that is required by a thread to acquire the mutex after sleeping on the mutex.

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7. The method of claim 5 further comprising:

adjusting the spinning thread count threshold value based on a number of acquisition attempts that is required by a thread to acquire the mutex after sleeping on the mutex.

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8. The method of claim 5 further comprising:

decreasing the spinning thread count threshold value if a thread acquires the mutex relatively slowly after sleeping on the mutex.

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9. The method of claim 5 further comprising:

increasing the spinning thread count threshold value if a thread acquires the mutex relatively quickly after sleeping on the mutex.

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10. A computer program product on a computer readable medium for use in a data processing system for managing a mutex, the computer program product comprising:

5 means for maintaining a spinning thread count value for a number of threads that are spinning on a mutex;

means for attempting to acquire the mutex by a first thread; and

10 means for determining to enter a spin state or a sleep state on the first thread based on the spinning thread count value in response to a determination that the mutex has already been acquired by a second thread.

11. The computer program product of claim 10 further comprising:

15 means for entering a spin state if the spinning thread count value satisfies a first condition; and

means for entering a sleep state if the spinning thread count value satisfies a second condition.

20 12. The computer program product of claim 11 wherein the first condition is that the spinning thread count value is less than a spinning thread count threshold value.

25 13. The computer program product of claim 11 wherein the second condition is that the spinning thread count value is greater than or equal to a spinning thread count threshold value.

14. The computer program product of claim 11 further comprising:

5 means for comparing the spinning thread count value with a spinning thread count threshold value to select a spin state or a sleep state.

15. The computer program product of claim 14 further comprising:

10 means for adjusting the spinning thread count threshold value based on a number of acquisition attempts that is required by a thread to acquire the mutex after sleeping on the mutex.

16. The computer program product of claim 14 further comprising:

means for decreasing the spinning thread count threshold value if a thread acquires the mutex relatively slowly after sleeping on the mutex.

20 17. The computer program product of claim 14 further comprising:

means for increasing the spinning thread count threshold value if a thread acquires the mutex relatively quickly after sleeping on the mutex.

18. An apparatus for managing a mutex, the apparatus comprising:

means for maintaining a spinning thread count value for a number of threads that are spinning on a mutex;

5 means for attempting to acquire the mutex by a first thread; and

means for determining to enter a spin state or a sleep state on the first thread based on the spinning thread count value in response to a determination that
10 the mutex has already been acquired by a second thread.

19. The apparatus of claim 18 further comprising:

means for entering a spin state if the spinning thread count value is less than a spinning thread count
15 threshold value; and

means for entering a sleep state if the spinning thread count value is greater than or equal to a spinning thread count threshold value.

20 20. The apparatus of claim 18 further comprising:

means for comparing the spinning thread count value with a spinning thread count threshold value to select a spin state or a sleep state; and

25 means for adjusting the spinning thread count threshold value based on a number of acquisition attempts that is required by a thread to acquire the mutex after sleeping on the mutex.